REMARKS

All of the claims are rejected under Section 103 over any one of Ovshinsky, Klersy, Czubatyj, Van Brocklin, or Czubatyj '340.

However, every one of these references relates to a digital system and not one of them relates to an analog system.

More particularly, each of them store states, not analog signals. States, regardless of the number of states, is commensurate with digital storage. There is no storage of states in analog storage.

With respect to Ovshinsky, it is pointed out that in the background prior art there is a discussion of an ovonic EEPROM that is capable of both analog and digital forms of information storage. However, the material pointed out by the Examiner indicates that what is referred to here is not storage of the analog signal itself, but storage of a representation, in digital form, of the analog signal. In other words, the analog signal is converted into gray scales or other digital representations and stored.

This is explicitly explained in column 1, lines 57-60, where there is a discussion of gray scale values. Gray scale is the digitization of the analog information. See the attachment to the previous response. This is further substantiated by the material at column 20, lines 56 *et. seq.*, talking about the dynamic range of resistance allows for broad "gray scale and multilevel analog memory storage." Thus, levels in gray scale teach digital storage of digitized analog information. Similarly, in column 20, line 61, it is explained that it is binary information that is stored in the cell. Further, multilevel storage, which preceded analog memory storage in line 57, is explained to be binary information in pseudo-analog form. Instead, analog levels are used and provided with the capability of storing n bits of binary information. There can be no doubt that analog information is converted to digital form (digitized) and this is what is being stored. While this is called analog storage, apparently because an analog signal is digitized and stored, it does not amount to storing an analog value as an analog value in the storage. While the reference's terminology is awkward and perhaps incorrect, the intent is clear.

The Klersy patent appears to have the same information as the Ovshinsky patent and the same comments apply.

The Czubatyj '046 patent appears to have the same information and the same comments apply.

The Van Brocklin patent, newly cited, also stores states. This is explicitly conceded in the second through the fourth line of page 6 of the office action and is clearly set forth in the Van Brocklin reference. If an analog signal is being stored there would be no states, be they multiple states or otherwise. Thus, in analog storage, level states are not stored, an analog signal is stored. The discussion of levels and states makes it absolutely clear that Van Brocklin is storing digitized representations of analog information.

For example, in column 5, lines 26-37, it is explained that for a given program state, there is a sensed current. There would not be states if analog storage was involved. Further, there is a discussion of four possible states and the note that any number of states could be implemented. In analog storage there would be no states. Clearly, the discussion is of digital storage. Similarly, with respect to the sense circuitry at column 5, lines 55-61, there is discussion of the detection of a particular value of an electrical parameter, plainly, a discussion of a digital storage device. Also, at column 5, lines 62-63, there is discussion of a memory cell that has one state-change device that can be programmed to multiple states.

Similarly, in connection with Figure 8, and column 9, lines 38 *et. seq.*, there is a discussion of states and programming to discrete states. Therefore, there can be no dispute that the information described in this reference involves digital storage. See, for example, claim 1 calling for a state change device, claim 11 calling for a state change device having at least three states, claim 21 calling for a state change device, and claim 31 calling for a state change device.

The newly cited Czubatyj '340 patent suffers from the same deficiencies described above. The fact that at column 2, lines 25-35, there is discussion of electrically detectable forms does not militate against determining states. The only alternatives described in column 2, lines 30-35, is what is called a binary value, a logical one or a logical zero, or an analog value such as a gray scale value or other electrically detectable form. As pointed out before, and as explained in the attachment to the previous response, a gray scale value is a digitized analog form. Clearly, the reference teaches what might be loosely and incorrectly called storing analog information, but doing so by digitizing that information. As such, the reference fails to meet the claim limitations.

Specifically, claim 1 calls for forming an analog memory using a phase change material. Claim 2 calls for selectively enabling digital or analog storage. None of the references enable

selective digital or analog data to be stored, not only because they never store analog data in analog form, but because they do not allow such selectivity.

The Applicants' usage of analog non-volatile memory is consistent with that set forth in U.S. Patent 5,745,409 at column 1, lines 26-39 cited by Applicants. This demonstrates that those skilled in the art understand that analog non-volatile memories are distinct from digital non-volatile memories and that they store analog, not digital, representations of analog information.

In view of these remarks, reconsideration is respectfully requested.

Respectfully submitted,

Date: August 26, 2005

Timothy N. Trop, Reg. No. 28,994
TROP, PRUNER & HU, P.C.
8554 Katy Freeway, Ste. 100
Houston, TX 77024
713/468-8880 [Phone]
713/468-8883 [Fax]